

CLAIMS

What is claimed is:

1. A flip chip package comprising:
a chip, the chip comprising a top surface, a bottom surface and one or more side surfaces disposed between the top and bottom surfaces;
a substrate, the substrate comprising an upper surface;
a plurality of reflowed solder bumps, the reflowed solder bumps electrically coupling the top surface with an adjacent portion of the upper surface; and
a monolithic element comprising solidified resin, the monolithic element encapsulating and adhesively bonded to (i) substantially all of the one or more side surfaces, (ii) a substantial portion of the upper surface, and (iii) the plurality of reflowed solder bumps located in a gap between the top surface and the upper surface.
2. The flip chip package of claim 1, wherein the solidified resin does not encapsulate the bottom surface.
3. The flip chip package of claim 2, wherein the resin further comprises a filler material.
4. The flip chip package of claim 3, wherein the filler material comprises silica microspheres.
5. The flip chip package of claim 1, wherein the resin encapsulates substantially all of the one or more side surfaces.

6. The flip chip package of claim 5, wherein the resin does not encapsulate the bottom surface.
7. The flip chip package of the claim 1, wherein the solidified resin comprises an epoxy.
8. The flip chip package of claim 1, wherein the substrate is a thin substrate.
9. The flip chip package of claim 1, wherein the substrate is comprised of a polymeric material.
10. The flip chip package of claim 8, wherein the substrate is approximately 0.05mm to 0.5mm thick.
11. The flip chip package of claim 1, further comprising at least one passive component electrically coupled with the substrate.
12. The flip chip package of claim 11, wherein the solidified resin fills a gap between a first surface of the at least one passive component and an adjacent surface of the substrate.
13. The flip chip package of claim 11, wherein the solidified resin fully encapsulates the at least one passive component.